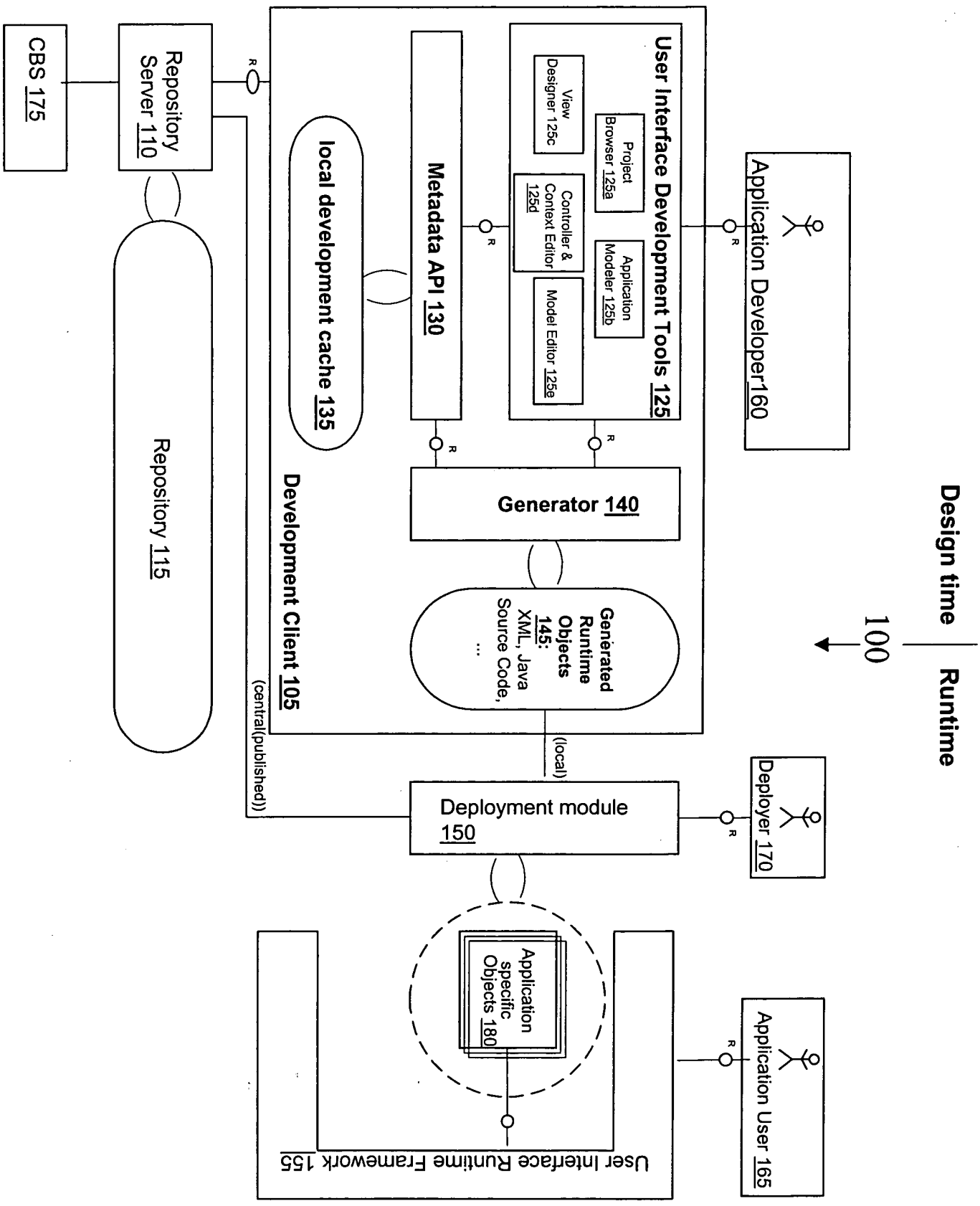

Design time
Runtime
100
CBS 175
Repository Server 110
Repository 115
Application Developer160
User Interface Development Tools 125
Project Browser 125a
View Designer 125c
Application Modeler 125b
Controller & Context Editor 125d
Model Editor 125e
Metadata API 130
local development cache 135
Development Client 105
Generator 140
Generated Runtime Objects 145: XML, Java Source Code, ...
(central(published))
(local)
Deployment module 150
Deployer 170
Application specific Objects 180
User Interface Runtime Framework 155
Application User 165
R

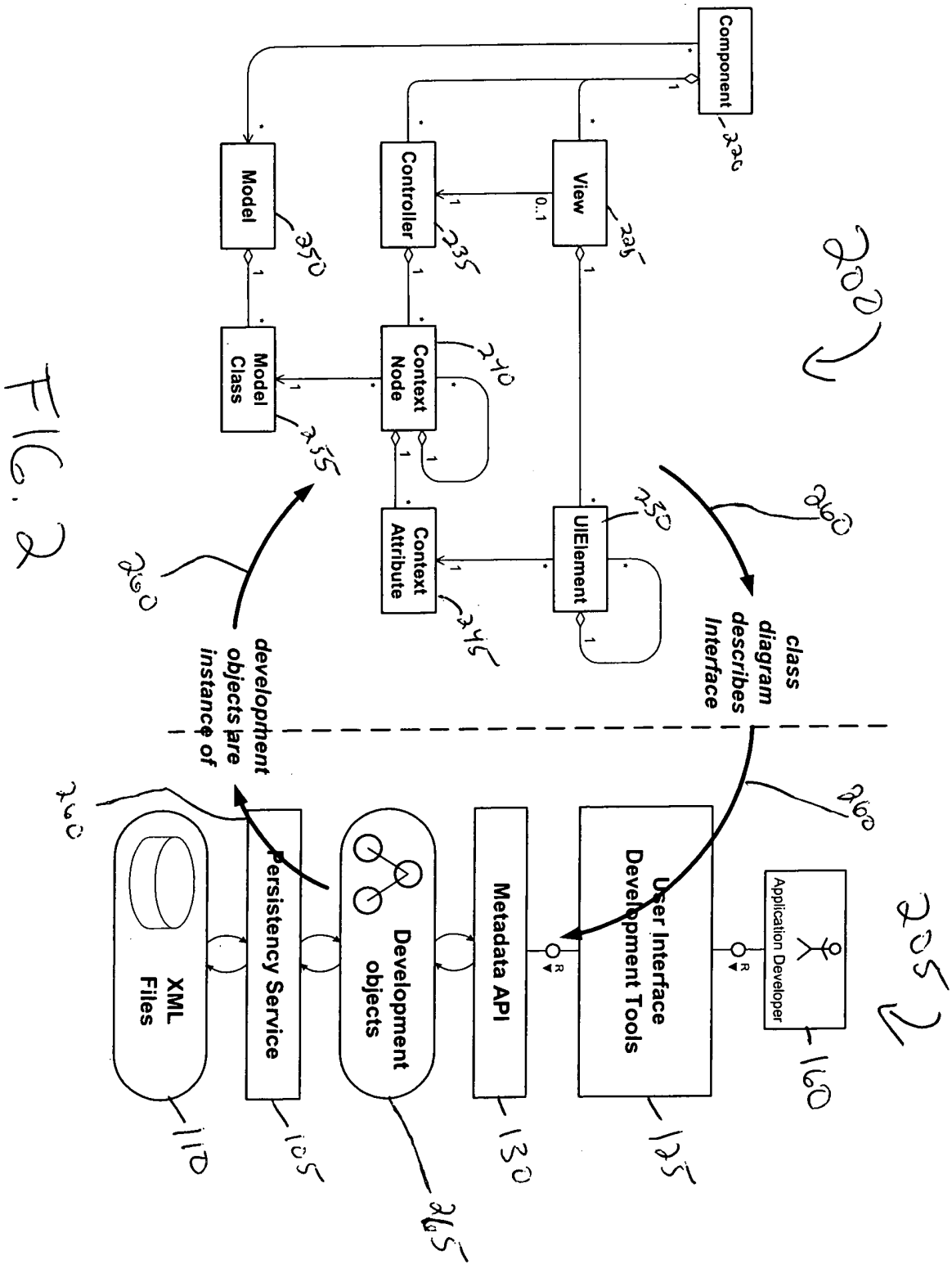

Component
Model
Controller
View
Model Class
Context Node
Context Attribute
UIElement
class diagram describes Interface
development objects are instance of
Application Developer
User Interface Development Tools
Metadata API
Development objects
Persistency Service
XML Files

FIG. 2

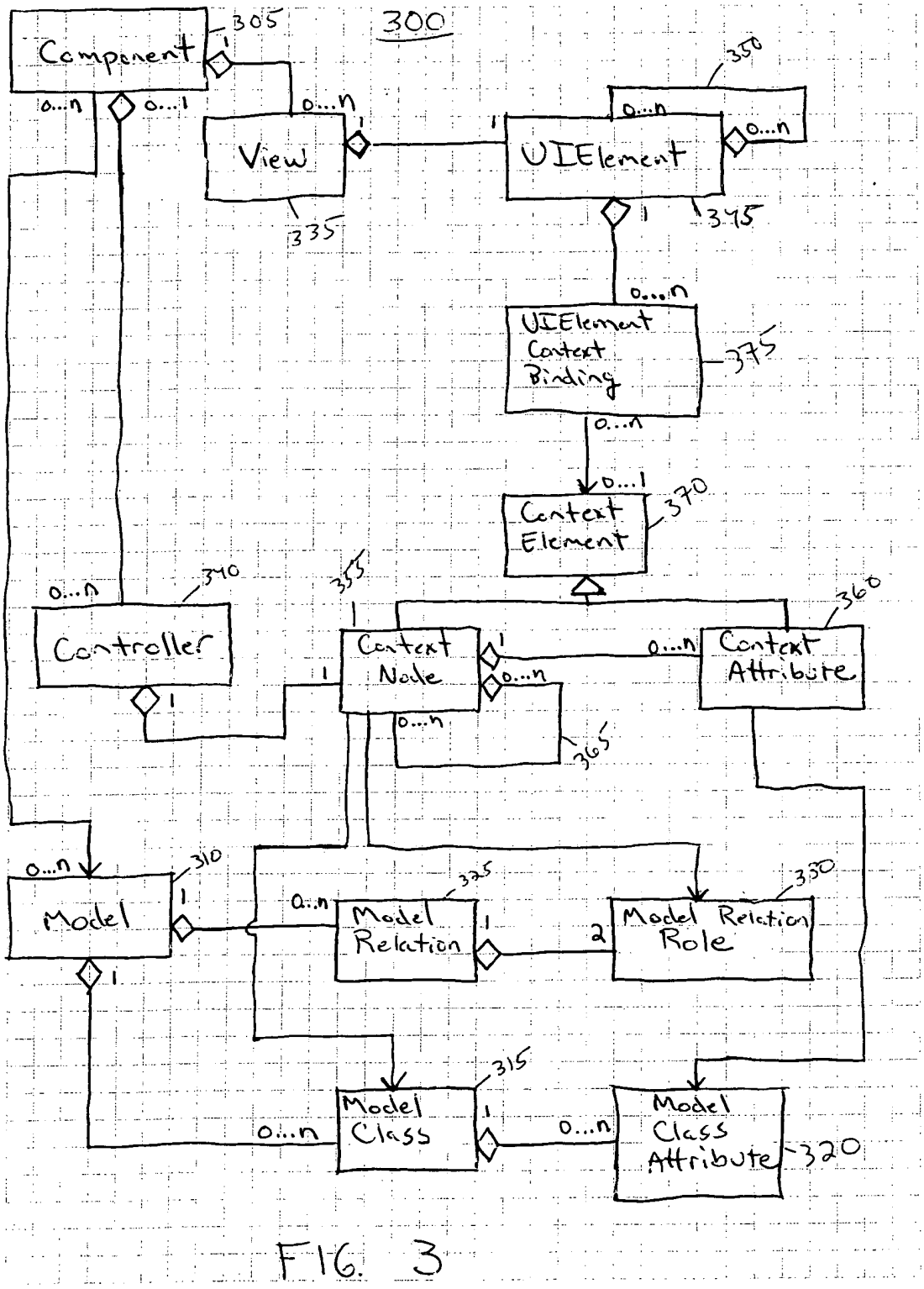

300
Component
305
View
335
UIElement
350
345
UIElement Context Binding
375
Context Element
370
Controller
340
Context Node
355
Context Attribute
360
365
Model
310
Model Relation
325
Model Relation Role
330
Model Class
315
Model Class Attribute
320

FIG. 3

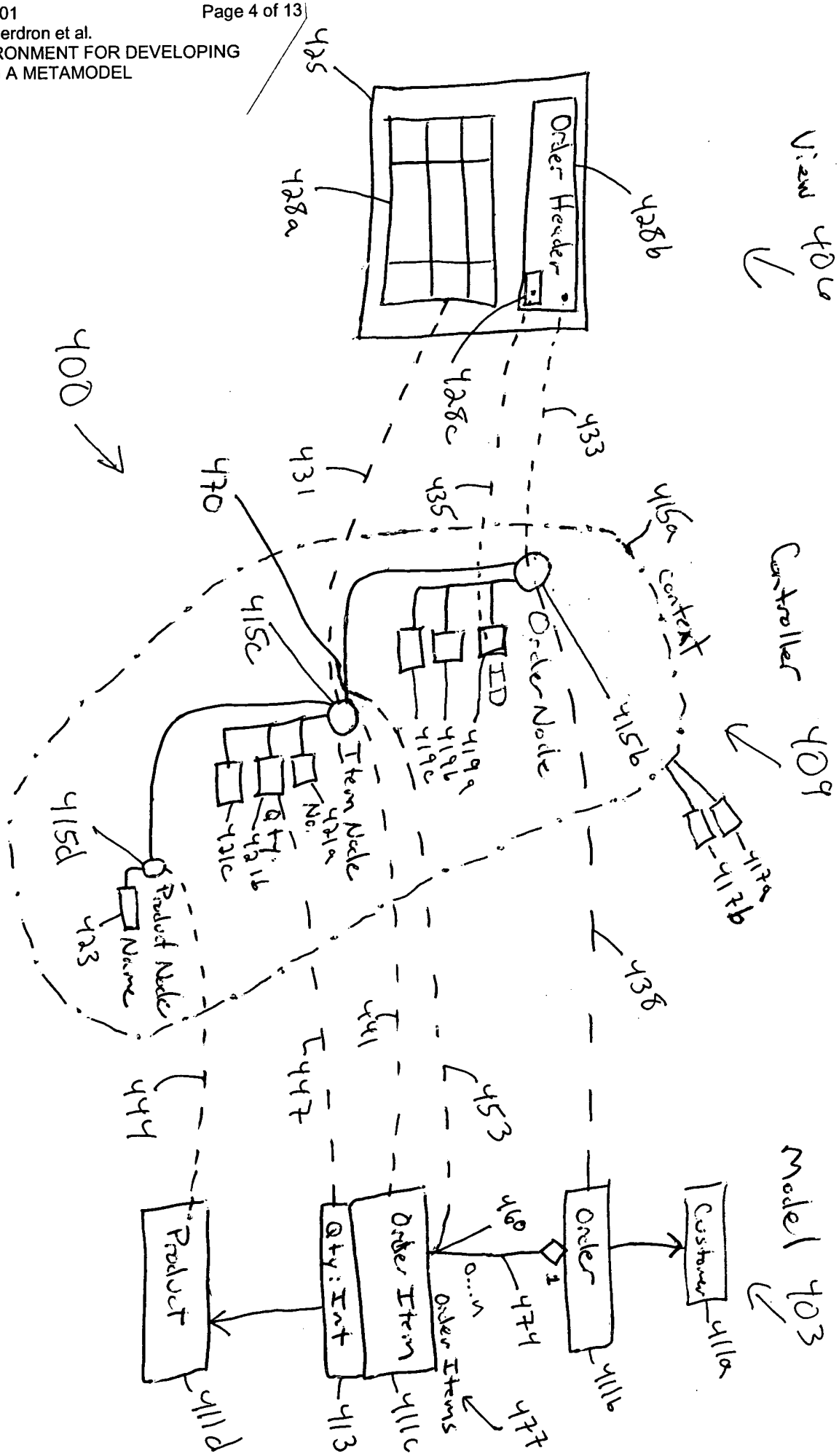
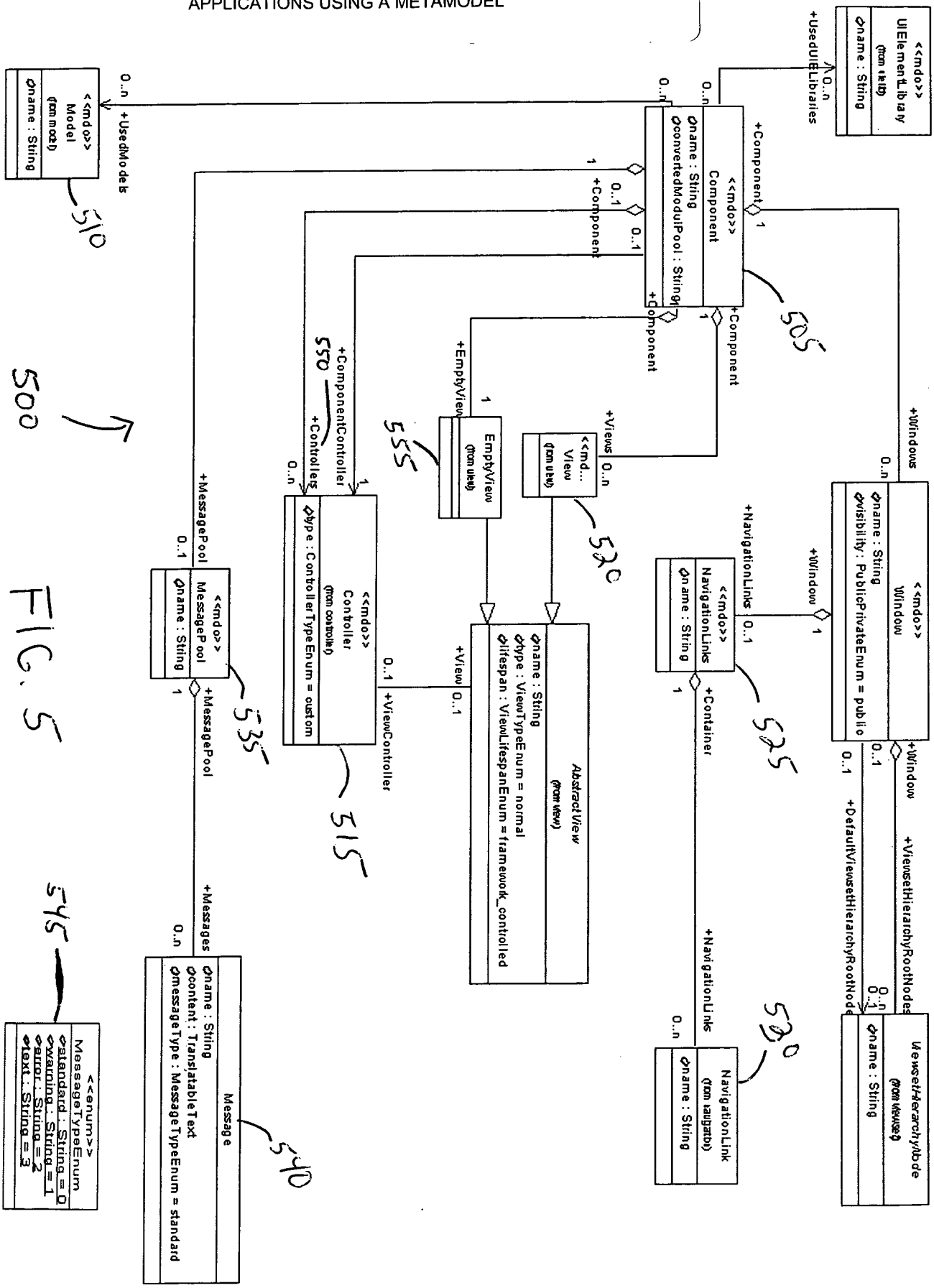

View 406
425
428a
Order Header
428b
428c
433
431
435
400
470
415a
Context
Controller 409
415c
Order Node
ID
419a
419b
419c
415b
Item Node
Qty
No.
421a
421b
421c
415d
Product Node
Name
423
436
441
447
444
453
Model 403
Product
Qty: Int
Order Item
460
0...n
Order Items
Order
1
474
Customer
411a
411b
411c
411d
413
477

FIG. 4


Class Diagram: component / Components
<<mdo>>
UIElementLibrary
(from mdo)
name : String
+UsedUIELibraries
0..n
<<mdo>>
Model
(from mdo)
name : String
510
+UsedModels
0..n
<<mdo>>
Component
name : String
convertedModulPool : String
505
+Component
+Windows
<<mdo>>
Window
name : String
visibility : PublicPrivateEnum = public
+Window
+ViewsetHierarchyRootNodes
+DefaultViewsetHierarchyRootNode
<<mdo>>
ViewsetHierarchyNode
(from viewset)
name : String
+NavigationLinks
<<mdo>>
NavigationLinks
name : String
525
+Container
+NavigationLinks
<<mdo>>
NavigationLink
(from navigation)
name : String
530
+Views
<<md...
View
(from view)
520
+EmptyView
EmptyView
(from view)
555
+ComponentController
+Controllers
<<mdo>>
Controller
(from controller)
type : ControllerTypeEnum = custom
515
+View
+ViewController
AbstractView
(from view)
name : String
type : ViewTypeEnum = normal
lifespan : ViewLifespanEnum = framework_controlled
+MessagePool
<<mdo>>
MessagePool
name : String
535
+MessagePool
+Messages
Message
name : String
content : TranslatableText
messageType : MessageTypeEnum = standard
540
<<enum>>
MessageTypeEnum
standard : String = 0
warning : String = 1
error : String = 2
text : String = 3
545
500
FIG. 5

Class Diagram: model / Model Structure

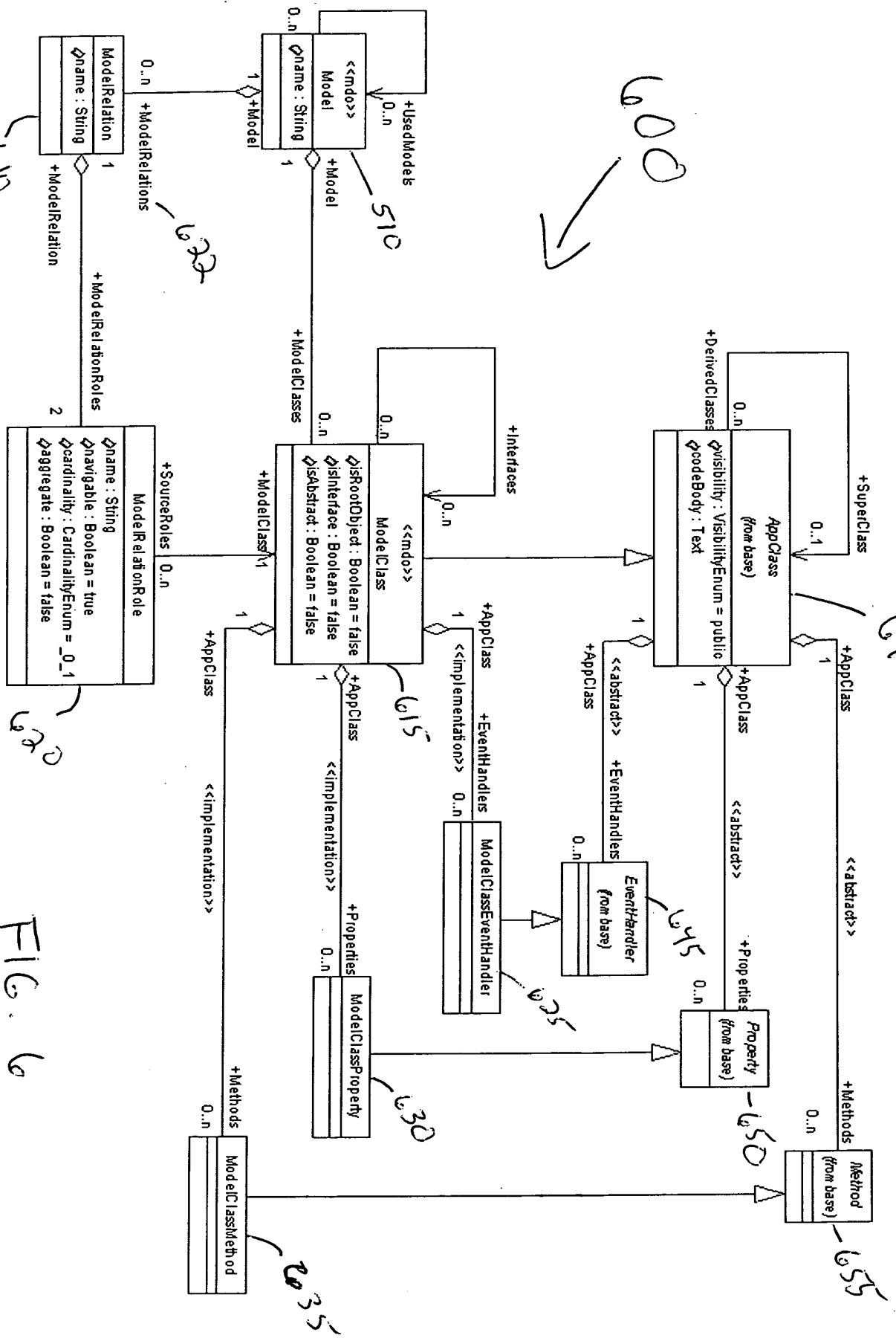
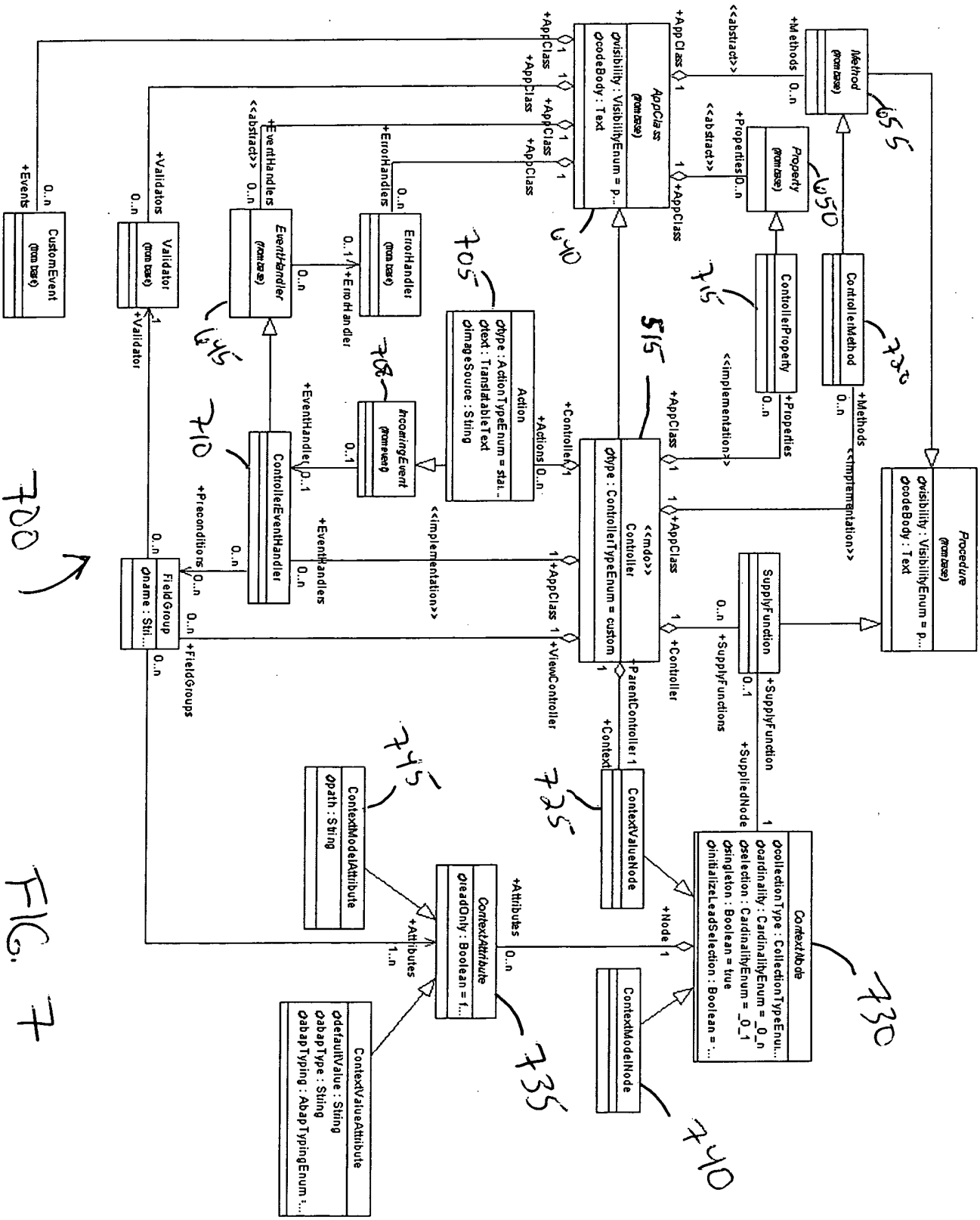


FIG. 6

Matter No.: 13913-122001
Applicant(s): Markus Cherdron et al.
DEVELOPMENT ENVIRONMENT FOR DEVELOPING APPLICATIONS USING A METAMODEL



Class Diagram: controller / Context (Model Nodes)

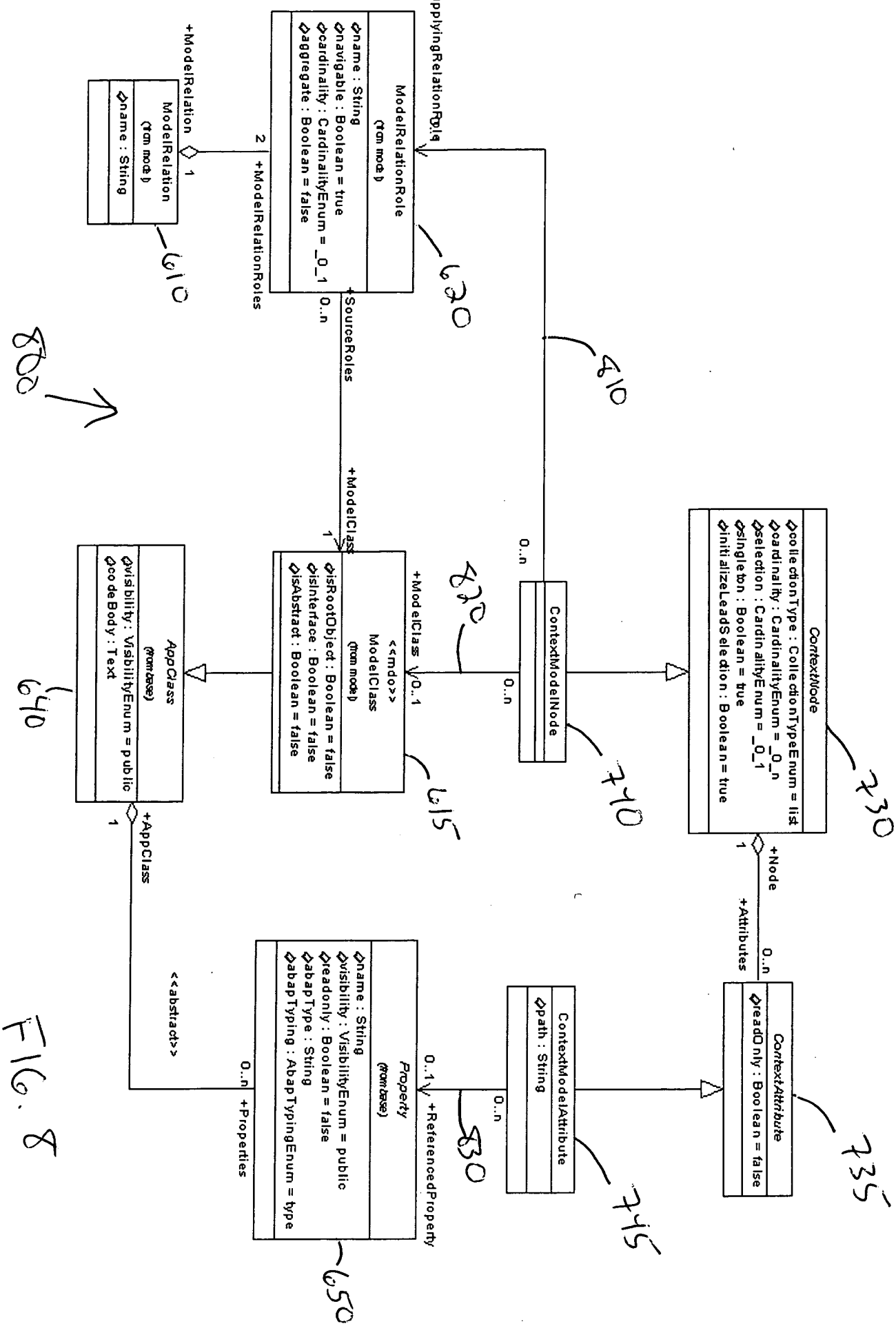


FIG. 8

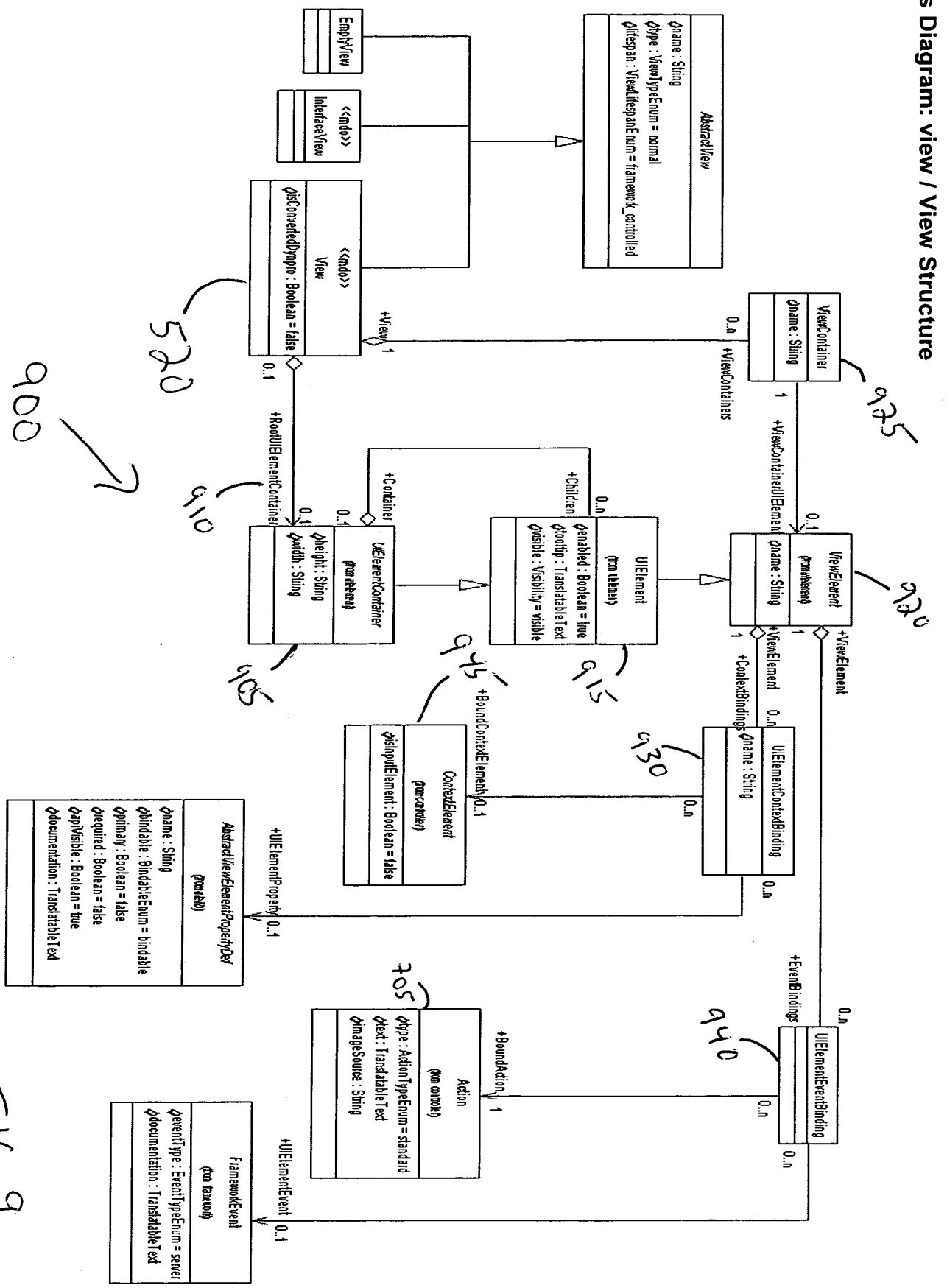

Class Diagram: view / View Structure
AbstractView
@name : String
@type : ViewTypeEnum = normal
@lifespan : ViewLifespanEnum = framework_controlled
EmptyView
<<mdo>>
InterfaceView
<<mdo>>
View
@isConvertedDynpro : Boolean = false
+View
1
0..n
+ViewContainer
ViewContainer
@name : String
1
+ViewContainerUIElement
0..1
ViewElement
@name : String
1
+ViewElement
+ContextBindings
0..n
UIElementContextBinding
@name : String
0..n
+EventBindings
0..n
UIElementEventBinding
0..n
+RootUIElementContainer
0..1
+Container
0..1
UIElementContainer
@height : String
@width : String
+Children
0..n
UIElement
@enabled : Boolean = true
@tooltip : TranslatableText
@visible : Visibility = visible
+BoundContextElement
0..1
ContextElement
@isInputElement : Boolean = false
+UIElementProperty
0..1
AbstractViewElementProperty
@name : String
@bindable : BindableEnum = bindable
@primary : Boolean = false
@required : Boolean = false
@apiVisible : Boolean = true
@documentation : TranslatableText
+BoundAction
1
Action
@type : ActionTypeEnum = standard
@text : TranslatableText
@imageSource : String
+UIElementEvent
0..1
FrameworkEvent
@eventType : EventTypeEnum = server
@documentation : TranslatableText
900
910
915
920
925
930
935
940
945
950
955

FIG. 9

Class Diagram: controller / Context Mapping

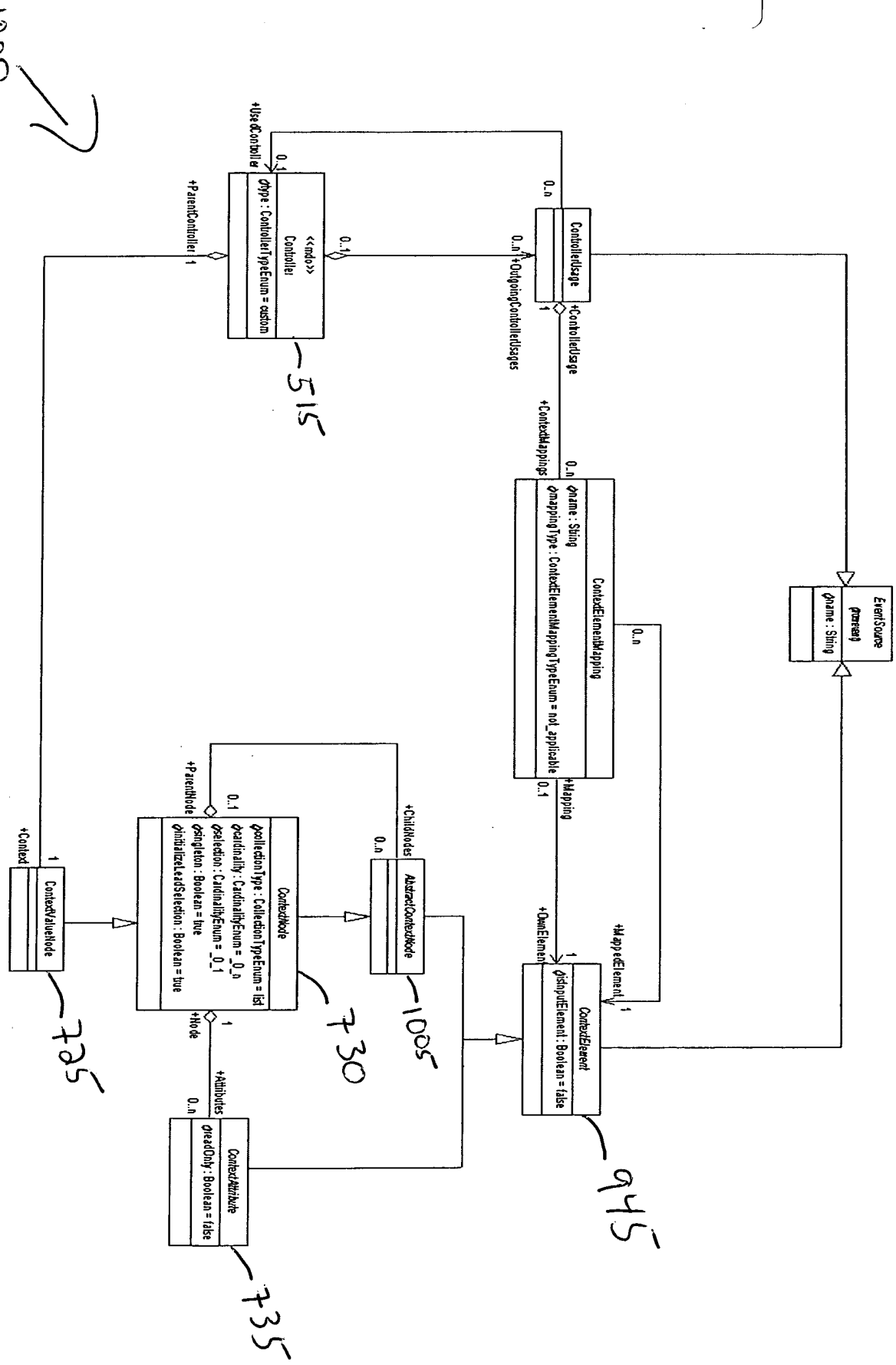


FIG. 10

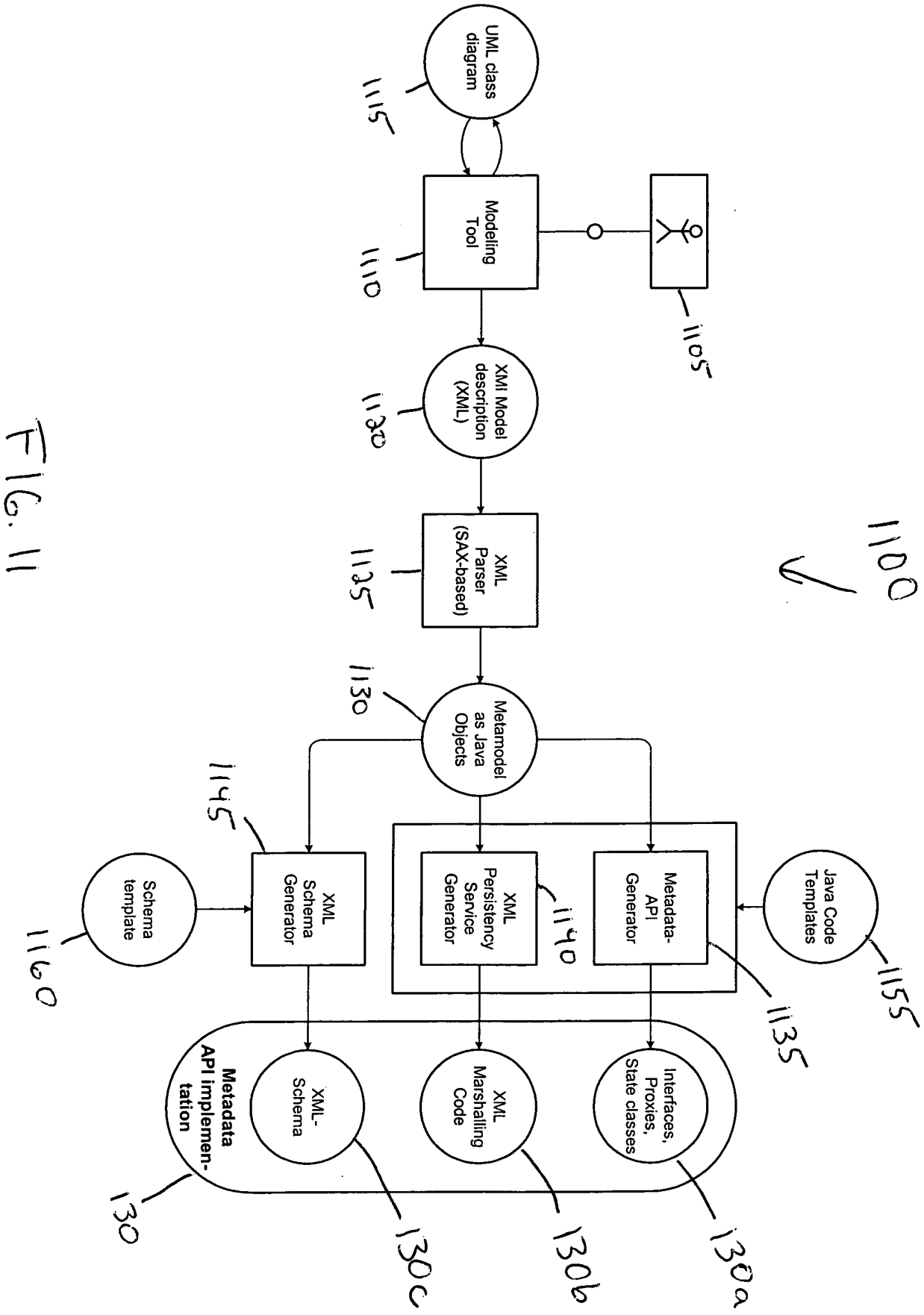

UML class diagram
1115
Modeling Tool
1110
1105
XMI Model description (XML)
1120
XML Parser (SAX-based)
1125
Metamodel as Java Objects
1130
1100
1145
Schema template
1160
XML Schema Generator
XML Persistency Service Generator
1140
Metadata-API Generator
Java Code Templates
1155
1135
Metadata API implementation
130
XML-Schema
XML Marshalling Code
Interfaces, Proxies, State classes
130c
130b
130a

FIG. 11

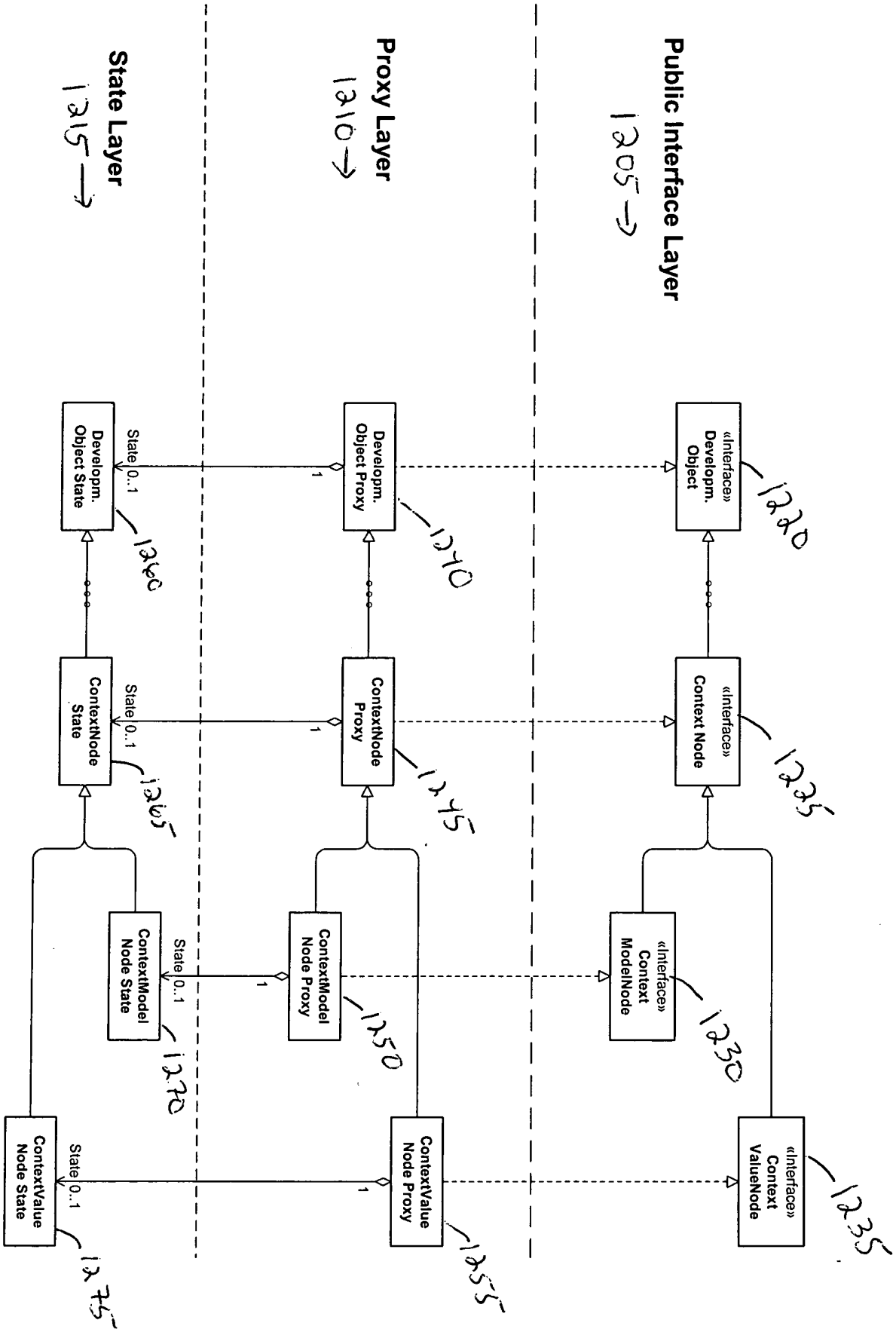

Public Interface Layer
1205
Proxy Layer
1210
State Layer
1215
«Interface» Developm. Object
1220
«Interface» Context Node
1225
«Interface» Context ModelNode
1230
«Interface» Context ValueNode
1235
Developm. Object Proxy
1240
ContextNode Proxy
1245
ContextModel Node Proxy
1250
ContextValue Node Proxy
1255
Developm. Object State
1260
ContextNode State
1265
ContextModel Node State
1270
ContextValue Node State
1275
State
0..1
1

FIG. 12

1200

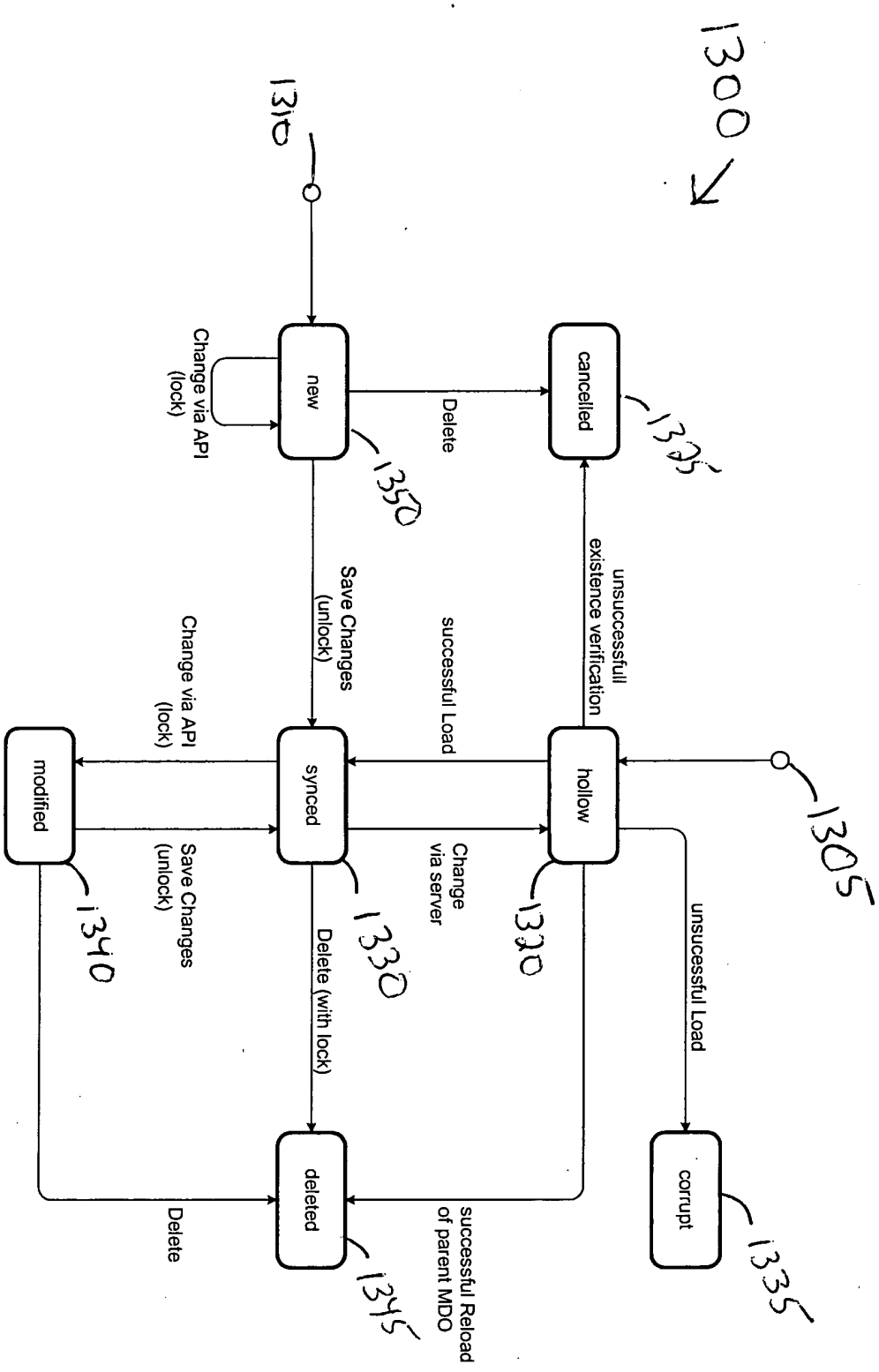

1300
1310
new
Change via API (lock)
Delete
cancelled
1325
1350
Save Changes (unlock)
unsuccessfull existence verification
Change via API (lock)
successful Load
modified
synced
hollow
1305
1340
1330
1320
Save Changes (unlock)
Change via server
Delete (with lock)
unsuccessful Load
deleted
corrupt
1345
1335
Delete
successful Reload of parent MDO
pure transient states

FIG. 13